

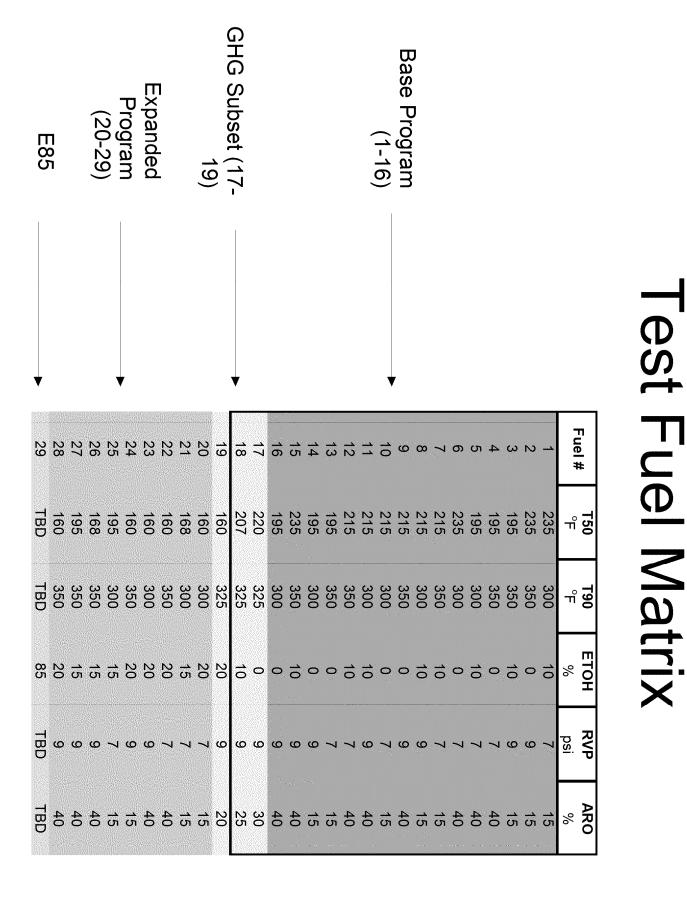
Base EPAct Program Design

545OneDrive2_00013135

- Tier 2 fuel effects (RVP,T50,T90, Arom, EtOH)
- Fuel variables:
- T50 (3 levels), T90 (2 levels), EtOH (E0 and E10), RVP (2 levels), Aromatics (2 levels)
- Computer generated optimal design of fuel matrix
- 16 fuels, 19 vehicles in main program
- "GHG Pilot" to precede main program
- Three additional, in-use E0, E10, E15 fuels tested in all 19 vehicles
- Completion in 2Q 2008
- VOC speciation, some 50 deg F, no PM speciation
- N₂O, NH₃ and HCN by FTIR
- Estimated cost: \$3.45M

Expanded EPAct Program

- \$0.9M has been made available to NREL from DOE's Biomass Program for use in expanding the EPAct Study
- Additional \$1.1M may become available shortly (Dec. 19) from DOE's Vehicle Technology Program
- Expanded fuel matrix consists of the following 29 fuels:
- Base fuel matrix (16 + 3 fuels)
- Nine additional E15 and E20 fuels
- E 85 fuel
- Emissions model will include:
- Lttects of ethanol content, T50, T90, aromatics and RVP
- Nonlinear effects of ethanol and T50
- Five selected interactions between fuel properties
- DOE would like to test three high emitters for a total of 22
- The add-on cost of the DOE component is estimated at \$1.85M



Expanded EPAct Program (C0nt'd)

- DOE also wants to consider the following:
- Limited 20°F tests
- Limited 100°F tests
- Up to three intermediate (e.g. 75k) mileage vehicles
- Limited PM speciation
- the final amount is known DOE component of EPAct Program will be defined once
- If the additional \$1.1M does not become available, then:
- The proposed fuel matrix expansion will not be possible 9 fuels must be tested or none
- The DOE component will be selected from among the following:
- Limited number of additional fuels (e.g. E15, E20 or E85)
- Additional high emitter and/or intermediate mileage vehicles
- Limited 20°F and/or 100°F tests
- Limited PM speciation